

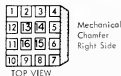
Functional Description

The Eight Single Diodes, ESD-1A, module consists of eight individual diodes with the anode and cathode terminating at specific pins. The individual diodes offer the circuit designer a uniformity of circuit packaging with other SLT modules and the additional design flexibility his application may require. The ESD-1A SLT diodes can be used for clamps and AND extending.

Schematic



Terminal Configuration



NOTE - 16 PIN MODULE

Maximum Ratings

Maximum current = 5.0 milliamps

Breakdown Voltage = 13 Volts

ESD-1A Module Functional Tests

| INDIVIDUAL DEVICE PARAMETER TESTS | | | | | |
|-----------------------------------|-----------------|--|---------|--------|---------|
| TESTS | COM- PONENTS | TESTS CONDITIONS | T °C | LIMITS | |
| | | | | MIN | MAX |
| Q_S | $D_1 - D_8$ | $I_F = 3.0ma$ See Fig. 1 | 25 | 23 | PC |
| FWD RECOVERY PEAK AMPLITUDE | $D_1 - D_8$ | $I_F = 2.0ma$ See Fig. 2 | 25 | 0.85 | V |
| V_F | $D_1 - D_8$ | $I_F = 0.1ma$ | 25 | .51 | V |
| V_F | $D_1 - D_8$ | $I_F = 0.5ma$ | 25 | .58 | V |
| V_F | $D_1 - D_8$ | $I_F = 1.0ma$ | 25 | .61 | V |
| V_F | $D_1 - D_8$ | $I_F = 3.0ma$ | 25 | .84 | V |
| V_F | $D_1 - D_8$ | $I_F = 5.0ma$ | 25 | .87 | V |
| BV_R | $D_1 - D_8$ | $I_R = 10 \mu a$ | 25 | 13 | V |
| I_g | $D_1 - D_8$ | $V_g = 12V$ | 75 | 0.5 | μa |
| DIODE CAPACITANCE | $D_1 - D_8$ | OV BIAS, $f = 1 \pm 0.5mhz$ AC SIGNAL $\leq 50mv$ P-P | 25 | 3.5 | pf |

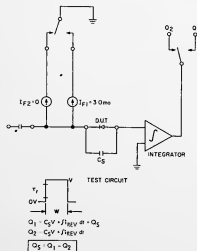


FIGURE 1

Notes

For this test the diode shunt capacity (incl Probe) shall be $10.5 \pm pf$ with a 50Ω HF Resistor in place of the Diode, the rise time, t_r , of the input voltage wave form shall be ≤ 2 ns, the operating frequency $\leq 50KHz$, pulse width $\leq 50ns$, Bandwidth of detector $\geq 750MHz$. Turn on is from $V_F = 0$.

Store Charge Test

V-PULSE AMPLITUDE: $5V \pm 25\%$

W-PULSE WIDTH: $> 50ns$

RISE TIME: $1\% - 50\% < 0.5ns$

$10\% - 90\% < 0.4ns$

SOURCE IMPEDANCE $< 10 \Omega$

I_{F1} - FORWARD CURRENT = $3.0ma \pm 0.3\%$

I_{F2} - FORWARD CURRENT = $0ma$

C_5 - SHUNT CAPACITY $< 50 pf$

INTEGRATOR RESPONSE $\leq 1ms$

Q_1 - CHARGE WHEN D, U.T. IS FORWARD

BIASED WITH $I_{F1} = 3.0ma$

Q_2 - CHARGE WHEN D, U.T. IS FORWARD

BIASED WITH $I_{F2} = 0ma$

Q_5 - STORED CHARGE

I_{REV} - DIODE LEAKAGE CURRENT

Forward Recovery

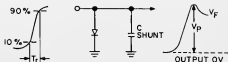


FIGURE 2